

Additionally an other important aspect of the general inventive concept is:

1) All the claimed products are oxidized by the single claimed method.
In all cases of the treatment of ligno-cellulose containing material such as the treatment of pulp (delignification/bleaching), waste water treatments of pulp and paper waste water, production of particle, fibre boards etc., deinking of waste paper, textile treatment (with exception of wool), coal solubilization the burden is treatment of ligno-cellulosics. The detergent application, chemical oxidation, treatment of general waste water and wool treatments are like 1) → claimed products which are oxidized by the single claimed method. Favorable reconsideration of the restriction requirement is respectfully requested.

RESPONSE TO OATH/ DECLARATION

The oath or declaration is again added (Appendix III)

RESPONSE TO CLAIM REJECTIONS- 35 USC § 112

1) The formal corrections according your requirements are respectfully submitted and attached in a corrected set of claims (claim 50 to 99) (Appendix III)

2) Additional requirements:

a) referring to your question page 5 : "Claim 50 step c:"

Special hydrolases such as mainly lipases are able to react under certain circumstances with peroxides or other similar precursors (instead of water) to generate from special organic acids mainly fatty acids per-acids. There is therefore no need for a oxidoreductase to perform this reactions.

b) (page 8) This additions are described in the description and are important for some further improvements of the invention and relates strongly to the claimed system in claim 1) as additional components.

c) (page 8) The post-processing or pre-processing relates strongly to a possible enhancement of the performance of the invention and has the antecedent basis also in the description of the invention.

RESPONSE TO CLAIM REJECTIONS- 35 USC . 101

It is the meaning that the use of the entire system in order to generate the active oxidant (active oxygen species/ dioxirane) according to claim 1) is the encompassing of the method /process mentioned.

Favorable reconsideration of the restriction requirement is respectfully requested.

RESPONSE TO CLAIM REJECTIONS- 35 USC § 102; 35 USC § 103

The applicant respectfully disagrees and requests reconsideration of the rejections under U.S.C. 102(b).

The rejections referring to Bailely et al. (WO 96/06148) are improper due to the fact that Ballely discloses a detergent composition comprising lipase and a lipase compatible anionic surfactant system.

Lipases are used for the removal of fat spots by splitting the fat esters.

Some groups of the disclosed surfactants contain fatty oleyl glycerol sulphates, fatty acid amides, tall oil or fatty acids in general etc. The reason for using these compounds in the disclosed detergent composition is to support the spot removal ability of the whole system and the to provide additional builder activity e.g.: "Such use of fatty acids will generally result in a diminution of sudsing, which should be taken into account by the formulator". The same is valid for the amylases (starch splitting). The use of **bleaching precursors** for detergent composition is to bleach spots of different kind such as coffee, tea, dyes etc.

The aim of the mentioned **ketones** present is as polymeric dispersing agent.

Similar purposes are claimed for the mentioned lipases.

The idea of the new oxidation/bleaching system filed is to provide a lipase or other appropriate hydrolases which can produce with the aid of e.g. peroxide (H_2O_2) and in the presence of fatty acids perfatty acids. The oxidation power but mainly the selectivity of peracids in general are not sufficient to carry out e.g. the delignification/bleaching of wood pulp having the desired performance and strength properties.

Therefore a ketone compound is added to generate by the reaction of the perfatty acid with the ketone dioxirane or the like. Dioxirane is known as a very powerful and selective oxidant e.g. also for pulp bleaching/delignification. One of the main advantages of this new enzymatic system for the generation of such mentioned oxidants (\rightarrow dioxiranes) is that the oxidant is slowly released (which implicates a very low dosage of the components), an important prerequisite to overcome the main disadvantages of chemical dioxirane forming systems which need a huge amount of peracids and ketone and makes this method very expensive.

It is obvious that the combination of the mentioned compounds used by Ballely and in similar way also by Gordon et al. (US 5719112), Damhus et al. (WO 90/00188), Damodaran et al. (US 5976859) and Margolin et al. (US 6140475) (the use of amidases, nitrilases, proteases or a combination of some of them is here also not relevant) is in no case based on such idea and mechanism but is derived from normal detergent formulations.

Therefore the applicant respectfully asks for following the mentioned arguments that the disclosed oxidation method in the filed application is new and therefore patentable due to the fact that it cannot be derived from any skilled person from the prior art and that also the idea for combining the mentioned compounds does not flow logically from their having been used individually in the prior art.

Favorable reconsideration of the restriction requirement is respectfully requested.

The applicant respectfully disagrees and requests reconsideration of the rejections under U.S.C. 103(a) due to the fact that the same is valid as for the rejection under U.S.C. 102(b) (see above), unpatentable over Kaare (US 5478356), Lee et al. (WO 92/13993) and Francis et al. (WO 94/18386) (both: chemical generation of dioxiranes, see above).

Kaare discloses "cyanoimides and compositions useful for bleaching"

The lipases are used for fat splitting especially in detergent (fat spot removal).

The ketone is used for the preparation of peroxyacid bleach precursor by its reaction with sodium cyanide and a dialkyl amine.

(This is not a reaction of a ketone with a perfatty acid for the generation of dioxirane as we disclose).

The fatty acids are used as surfactants or e.g. lauric acid as suitable coating material.

There is no evidence for any similar inventory idea as in the filed own application.

Additionally Kaaret does not disclose any example or any exact conditions and concentrations of the components referring to the own invention or referring to the new idea on which the own invention based.

Therefore it is also in this case not apparent that one of ordinary skill in the art would have the reasonable expectation of success in producing the claimed invention and therefore it is not as a whole *prima facie* obvious to one of ordinary skilled in the art at the time the invention was made.

Therefore we kindly ask for following our arguments that the disclosed oxidation method in the filed application is new and therefore patentable due to the fact that it cannot be derived from any skilled person from the prior art and that also the idea for combining the mentioned compounds does not flow logically from their having been used individually in the prior art. Favorable reconsideration of the restriction requirement is respectfully requested.

Respectfully,

24.2.2002 / H.P. Call

Dr. Hans-Peter Call
Übach-Palenberg, Germany
Heinsberger Strasse 14a
Phone: 0049 2451 952814
Fax: 0049 2451 952842
e-mail: Bioscreen@t-online.de